

Claims

We claim:

1. A multilayer structure for packaging bone-in meat comprising:

a heat-sealant layer comprising a material selected from the group consisting of

polyolefins, ionomers, and blends thereof;

a first polyamide layer; and

a barrier layer,

wherein all layers are coextruded together to form said multilayer film and the multilayer structure is oriented.

2. The multilayer structure of claim 1 wherein said barrier layer is disposed between said first polyamide layer and said heat-sealant layer.

3. The multilayer structure of claim 1 wherein said first polyamide layer is disposed between said barrier layer and said heat-sealant layer.

4. The multilayer structure of claim 1 wherein said barrier layer comprises ethylene vinyl alcohol copolymer.

5. The multilayer structure of claim 4 wherein said ethylene vinyl alcohol copolymer has an ethylene content of between about 24 mol % and about 52 mol %.

6. The multilayer structure of claim 4 wherein said ethylene vinyl alcohol copolymer has an ethylene content of between about 27 mol % and about 42 mol %.

7. The multilayer structure of claim 1 wherein said heat-sealant layer comprises polyethylene.

8. The multilayer structure of claim 1 wherein said heat-sealant layer comprises a blend of linear low density polyethylene and low density polyethylene.

9. The multilayer structure of claim 1 wherein said first polyamide layer comprises a blend of semi-crystalline polyamide and amorphous polyamide.

10. The multilayer structure of claim 1 wherein said first polyamide layer comprises a blend of nylon 6 and amorphous polyamide.

5 11. The multilayer structure of claim 1 wherein said first polyamide layer comprises a blend of nylon 6,66 and amorphous polyamide.

12. The multilayer structure of claim 9 wherein said blend comprises about 80% by weight to about 99% by weight semi-crystalline polyamide and about 1% by weight to about 20% by weight amorphous polyamide.

10 13. The multilayer structure of claim 10 wherein said blend comprises about 85% by weight to about 99% by weight semi-crystalline polyamide and about 1% by weight to about 15% by weight amorphous polyamide.

14. The multilayer structure of claim 1 wherein said first polyamide comprises a blend of a first semi-crystalline polyamide and a second semi-crystalline polyamide.

15 15. The multilayer structure of claim 1 wherein said first polyamide comprises a blend of a first semi-crystalline polyamide, a second semi-crystalline polyamide and amorphous polyamide.

16. The multilayer structure of claim 15 wherein said first polyamide layer comprises a blend of nylon 6, nylon 6,69 and amorphous polyamide.

20 17. The multilayer structure of claim 15 wherein said blend comprises about 60% by weight to about 80% by weight of said first semi-crystalline polyamide, about 20% by weight to about 30% by weight of said second semi-crystalline polyamide and about 1% by weight to about 10% by weight of said amorphous polyamide.

18. The multilayer structure of claim 1 further comprising a tie layer.
19. The multilayer structure of claim 1 wherein said first polyamide layer forms an outer layer of said multilayer film.
20. The multilayer structure of claim 1 wherein said multilayer structure is annealed.
- 5 21. The multilayer structure of claim 1 wherein the structure is plasticized.
22. The multilayer structure of claim 1 wherein the multilayer structure is moisturized via the application of water to said multilayer film.
23. The multilayer structure of claim 1 wherein the multilayer structure is irradiated to promote crosslinking between the layers of said multilayer structure.
- 10 24. The multilayer structure of claim 1 wherein the multilayer structure is irradiated to promote molecular crosslinking within a layer of said multilayer structure.
25. The multilayer structure of claim 1 wherein the heat-sealant layer comprises an additive selected from the group consisting of slip, antiblock or blends thereof.
26. The multilayer structure of claim 1 further comprising:
- 15 an outer layer comprising a material selected from the group consisting of polyolefins, polyamides, ionomers, polyesters and blends thereof,
- wherein said first polyamide layer is disposed between said barrier layer and said outer layer.
27. The multilayer structure of claim 1 wherein said multilayer structure is between about
- 20 1 mil and about 8 mils thick.
28. The multilayer structure of claim 1 wherein said multilayer structure is between about 1.5 mils and about 5 mils thick.

29. The multilayer structure of claim 1 further comprising a second polyamide layer, wherein said first and second polyamide layers are disposed on opposite sides of said barrier layer.

30. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of semi-crystalline polyamide and amorphous polyamide.

31. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of nylon 6 and amorphous polyamide.

32. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of nylon 6,66 and amorphous polyamide.

33. The multilayer structure of claim 29 wherein said second polyamide layer comprises about 80% by weight to about 99% by weight semi-crystalline polyamide and about 1% by weight to about 20% by weight amorphous polyamide.

34. The multilayer structure of claim 29 wherein said second polyamide layer comprises about 85% by weight to about 99% by weight semi-crystalline polyamide and about 1% by weight to about 15% by weight amorphous polyamide.

35. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of a first semi-crystalline polyamide and a second semi-crystalline polyamide.

36. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of a first semi-crystalline polyamide, a second semi-crystalline polyamide and amorphous polyamide.

37. The multilayer structure of claim 29 wherein said second polyamide layer comprises a blend of nylon 6, nylon 6,69 and amorphous polyamide.

38. The multilayer structure of claim 36 wherein said second polyamide layer comprises about 60% by weight to about 80% by weight of said first semi-crystalline polyamide, about 20% by weight to about 30% by weight of said second semi-crystalline polyamide and about 1% by weight to about 10% by weight of said amorphous polyamide.

5 39. The multilayer structure of claim 29 further comprising:

an outer layer comprising a material selected from the group consisting of polyolefins, polyamides, ionomers, polyesters, and blends thereof,

wherein said first polyamide layer is disposed between said barrier layer and said outer layer and said second polyamide layer is disposed between said barrier layer and said heat-sealant layer.

40. The multilayer structure of claim 39 wherein said outer layer comprises a blend of linear low density polyethylene and low density polyethylene.

41. The multilayer structure of claim 39 further comprising a tie layer disposed between said outer layer and said first polyamide layer.

15 42. The multilayer structure of claim 39 further comprising a tie layer disposed between said heat-sealant layer and said second polyamide layer.

43. The multilayer structure of claim 39 further comprising:

a first tie layer disposed between said outer layer and said first polyamide layer;
and

20 a second tie layer disposed between said heat-sealant layer and said second polyamide layer.

44. The multilayer structure of claim 39 wherein said first and second polyamide layers each comprise between about 10% by volume and about 60% by volume of the multilayer structure.

5 45. The multilayer structure of claim 1 wherein said multilayer structure has 25% free shrink at about 200°F.

46. The multilayer structure of claim 1 having an orientation factor of between about 6 and about 20.

47. The multilayer structure of claim 1 having an orientation factor of between about 8 and about 13.

10 48. The multilayer structure of claim 1 wherein at least one of said layers comprises a tie concentrate blended therein.